

DRAWING AMENDMENTS

It is proposed that FIGS. 1-5 of the drawings should be amended in the manner indicated in the accompanying copies thereof. If the examiner approves of the proposed amendments, appropriate replacement sheets will be filed in due course.

REMARKS

The description has been amended extensively in light of the examiner's objections raised under points 1 and 2 on page 2 of the Office Action.

Claims 3 and 8 have been amended in view of the examiner's objections to those claims.

Claim 1 stands rejected under 35 USC 102 over Akesaka.

Claim 1 distinguishes over Akesaka by requiring that the endmost part of the drive to the boring bit is adjustable in two directions at 90°. In Akesaka, the drive motor 82 is coupled to the boring bit 28 by a shaft 26, and FIG. 1(A) shows clearly that the shaft 26 is not adjustable in two directions at 90° relative to the partition wall 24 of the boring head portion 14. Akesaka does not disclose or suggest that the boring bit 28 should be adjustable in this manner. Accordingly, claim 1 is patentable over the disclosure of Akesaka.

The new claim 13 is patentable over Akesaka for similar reasons to those advanced in support of claim 1.

The new claim 14 distinguishes over Akesaka for similar reasons to those presented in support of claim 1. Further, claim 14 specifies that the drive motor is located to the rear of the boring head and that the drive shaft is coupled at a forward end thereof to the boring bit and at a rearward end to the drive motor for driving the boring bit. In Akesaka, the drive motor 32 is located within the boring head 12, 14, 16.

Claim 1 further stands rejected under 35 USC 102 over Hayashi et al. With respect to the subject matter of claim 1, the disclosure of Hayashi et al is essentially the same as that of Akesaka and accordingly claims 1, 13 and 14 distinguish over Hayashi et al for similar reasons to those presented in response to the rejection over Akesaka.


Claim 1 stands rejected under 35 USC 102 over Tull et al. Tull et al discloses an earth boring apparatus in which a laser target 118 is attached to a pipe casing 12d. The casings 12 are forced into the ground through a bore which is cut by a cutting head 16. The forward casing 12d is peripherally connected to a steering head 20 that carries the cutting head. Claim 1 is not anticipated by Tull et al. Claim 1 requires that the endmost part of the drive to the boring bit be adjustable relative to the boring bit in two directions and be

provided with a target for the laser beam. In accordance with the disclosure of Tull et al, the pipe casings are forced through the bore that has been formed by the cutting head 16. It may be considered that the cutting head 16 is an apt counterpart for the boring bit of claim 1, but Tull et al does not disclose or suggest that the casings 12 serve as a drive to the boring bit. Further, the examiner has not identified an apt counterpart for the boring head of claim 1 or suggested that the pipe casing 12d provided with the target 118 is adjustable relative to the counterpart of the boring head.

Claims 13 and 14 distinguish over Tull et al for similar reasons to those advanced in support of claim 1. Further, claims 13 and 14 distinguish over Tull et al for similar reasons to those presented in response to the rejection over Akesaka.

In view of the foregoing, it is submitted that the independent claims 1, 13 and 14 are allowable. It follows that the dependent claims also are allowable.

Respectfully submitted,



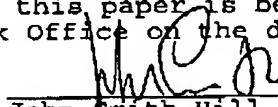
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